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| 09/943,201 | 08/30/2001 | G.E. Tornquist | H0002285 | 8481 |

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| EXAMINER |
| NGUYEN, HANH N |

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2834 | |

DATE MAILED: 03/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|--------------------------------------|---|
| Office Action Summary | Application No. 09/943,201 | Applicant(s) TORNQUIST ET AL. |
| | Examiner Nguyen N Hanh | Art Unit 2834 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

Disposition of Claims

4) Claim(s) 1-10 and 12-23 is/are pending in the application.

4a) Of the above claim(s) 11 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-10 and 12-23 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 30 August 2001 is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s)

4) Interview Summary (PTO-413) Paper No(s). ____ .
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____

DETAILED ACTION

Remarks

1. During telephone interview with attorney Keith A. Newburry, Registration No. 38,980 on 3/17/03, the Applicant has agreed to cancel claim 11 due to restriction requirement.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "the first means includes a ring" as in claim 13 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,5,6,8-10,12-18,21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper.

Regarding claim 1, Cooper discloses a rotor for use in a high speed generator (intended use, patentable weight not given), the rotor (23 in Fig. 13) comprising: a shaft

extending axially through the rotor; a plurality of spokes (Fig. 5) extending radially from a location along the shaft; a plurality of supports (44), wherein each one of the supports is positioned proximate a respective one of the spokes; a plurality of coils of wire windings (27), each wrapped around a respective one of the supports and a respective one of the spokes; and at least one cap device coupled to ends of the spokes away from the shaft, the at least one cap device (36) preventing the wire windings of the coils from moving outward away from the shaft beyond outer radial limits; wherein each support (44 in Fig. 5) is coupled to the at least one cap device, wherein each support extends radially inward along its respective spoke from the at least one cap device to at least a respective inner limit, wherein each support includes at its respective inner limit a respective flange (46) protruding away from the respective spoke, and wherein each flange prevents the wire windings of the respective coil from moving beyond the respective inner limit towards the shaft.

Regarding claim 5, Cooper also discloses a rotor wherein the at least one cap device includes a plurality of cap hats (36 in Fig. 5) that are respectively coupled to the respective spokes.

Regarding claim 6, Cooper also discloses a rotor wherein each cap hat is also respectively coupled to the respective support (Fig. 5).

Regarding claim 8, Cooper also discloses a rotor wherein the at least one cap device is a ring (50) that is coupled to all of the spokes.

Regarding claim 9, Cooper also discloses a rotor wherein the plurality of poles includes four poles.

Regarding claim 10, Cooper also discloses a rotor wherein the rotor is configured for implementation as the rotor of a high-speed, main generator (Col. 1, lines 1-3), and wherein the rotor is configured to receive field winding current for the wire coils from an exciter generator (inherent).

Regarding claim 12, Cooper also discloses a generator comprising: a stator (inherent in a generator); a rotor (23 in Fig. 13) rotatably coupled within the stator, the rotor including: a shaft extending axially through the rotor; a plurality of appendages (Fig. 5) extending radially outward from the shaft; a plurality of wire coils (27) that are supported away from the shaft; by the plurality of appendages; a first means (cap 36 and ring 50) for preventing outward radial movement of wires of the wire coils beyond respective outer limits; and a second means (support 44) for preventing inward radial movement of wires of the wire coils beyond respective inner limits; wherein at least one of the first means and second means is secured to the plurality of appendages and, when only one of the first means and second means is secured to the plurality of appendages (cap 36 is secured to appendage as described in Col. 4, lines 25-40), the remaining other means (support 44) is further secured to that one of the first and second means that is secured to the appendages.

Regarding claim 13, Cooper also discloses a generator wherein the first means (cap 36 and ring 50) includes at least one of a plurality of end cap hats and a ring.

Regarding claim 14, Cooper also discloses a generator wherein the second means includes a plurality of U-shaped supports (44 in Fig. 5) that are positioned in between the appendages and the wire coils, and wherein the U-shaped supports

include flanges (46) that protrude away from the appendages proximate the respective inner limits along the appendages, and thereby prevent movement of the wire coils beyond the inner limits toward the shaft.

Regarding claim 15, Cooper also discloses a generator wherein the second means includes a plurality of L-type brackets (44 in Fig. 13), wherein the L-type brackets respectively extend from the first means inward toward the shaft along the plurality of appendages and further at the respective inner limits (flange 46) extend toward the appendages, so that inward movement of the wire coils beyond the inner limits is prevented.

Regarding claim 16, Cooper also discloses an end cap device for implementation in a rotor including an appendage extending outward radially from a shaft of the rotor and further including a support (44 in Fig. 13) positioned on the appendage (by means of cap 36), wherein the support is capable of supporting end turns of a wire coil of the rotor and includes a flange at an inner radial position that limits movement of the end turns radially inward toward the shaft, the end cap device comprising: a physical barrier (the surface facing the coils); a first fastening element by which the end cap device is coupled to the appendage (the outer surface of the member 36 lies inside wall Pw as described in Col. 4, lines 30-35); and a second fastening element (bolt 41) by which the end cap device is coupled to the support.

Regarding claim 17, it is noted that all limitations of the method claim has been fulfilled by Copper as in claims 1 and 12.

Regarding claim 18, it is noted that all limitations of the method claim has been fulfilled by Copper as in claim 1.

Regarding claim 21, it is noted that all limitations of the method claim has been fulfilled by Copper as in claim 16.

Regarding claim 22, it is noted that all limitations of the method claim has been fulfilled by Copper as in claim 15.

Regarding claim 23, it is noted that all limitations of the method claim has been fulfilled by Copper as in claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper in view of Stephens

Regarding claim 2, Copper shows all limitations of the claimed invention except showing the rotor wherein the supports are brackets that curve around the respective spokes.

However, Stephens discloses the U-shape bracket that curve around the respective spokes for the purpose of supporting the coils.

Since Cooper and Stephens are in the same field of endeavor, the purpose disclosed by Stephens would have been recognized in the pertinent art of Cooper.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Copper by forming a U-shape bracket that curve around the spoke as taught by Stephens for the purpose of supporting the coils.

Regarding claim 3, Cooper also discloses a rotor wherein the supports are drawn towards the at least one cap device when the supports are coupled thereto, so that the wire windings of the respective coils experience pressure between the respective flanges and at least one outward protrusion of the at least one cap device (Fig. 13).

5. Claims 4,7,19,20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper.

Regarding claim 4, Cooper shows all limitations of the claimed invention except showing the rotor wherein the supports are formed from a material selected from the group consisting of aluminum, titanium and steel.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to form the supports from a material selected from the group consisting of aluminum, titanium and steel, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 7, Cooper shows all limitations of the claimed invention except showing the rotor wherein each cap hat is coupled to its respective spoke by two bolts, and each cap hat is further coupled to its respective support by two additional bolts. It would have been obvious to one having skilled in the art at the time the invention was made to use two bolts to couple the hat cap to the spoke and another two bolts to

couple the cap hat to the support since the Examiner takes an Official Notice of the equivalence of using one bolt or press-fit two parts together or using two bolts for the purpose to couple two parts together and the selection of these known equivalents would be within the level of ordinary skill in the art.

Regarding claim 19, it is noted that all limitations of the method claim has been fulfilled by Copper as in claim 7.

Regarding claim 20, it is noted that all limitations of the method claim has been fulfilled by Copper as in claims 3 and 7.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (703) 305-3466. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner 's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HNN

March 21, 2003

Thomas M. O'Byrnes
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